Chapter 7: Ethics, Exchange, and Production

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> If I have two journeymen, **one naturally industrious**, the other idle, but both perform a day's work equally good, ought I to give the latter the most wages? Indeed, lazy workmen are commonly observed to be more extravagant in their demands than the industrious; for, if they have not more for their work, they cannot live as well. But though it be true to a proverb that lazy folks take the most pains, does it follow that they deserve the most money?
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> If you were to employ servants in affairs of trust, would you not bid more for one you knew was naturally honest than for one naturally roguish, but who has lately acted honestly? Franklin, Benjamin (1734/2012-12-18). "Self Denial Is Not the Essence of Virtue." *Memoirs of Benjamin Franklin; Written by Himself,* Volume II (of 2) (Kindle Locations 414-419).

I. Introduction

Commerce is no more automatic than communities. It is facilitated by rules of conduct that reduce unproductive conflict, but other problems associated with exchange and team production must also be overcome. Nonetheless, local trading networks emerged at about the same time as settled communities. Money goods have been found in archeological digs as old as 10,000 BCE.[1] This suggests that many of the technologies, rules of conduct, and laws that allowed communities to emerge also facilitate exchange, and perhaps the converse is true as well.[2]

Douglas North (1981, 1990) argues that a good deal of economic development is a consequence of the evolution of formal and informal institutions that reduce what economists refer to as transactions costs. For the most part, he and his colleagues have studied variations in law and

[1] See Aristotle's *Politics* or Menger (1992) for early evolutionary theories of the emergence of money. See Davies (2010) for an overview of contemporary theories of the emergence, use, and emergence of early money goods. Einzig (2014) provides a useful overview of anthropological research on the uses of primitive money. Davies suggest that informal gift-giving, favor trading, and associated networks of personal debts and credits were commonplace before money goods arose. Heichelheim (1958) notes that rings, shells, beads, and other forms of money have been used at least since the bronze age. Older repositories of shells and beads exist, and some have speculated that they were used as money goods.

[2] Insofar as humans thrive in such societies, it also provides a survivorship based explanation for the generalized ability of humans to internalize a variety of norms and to detect and punish (or exclude) those who violate norms.

organization that increase the likelihood that agreements will be executed as intended. Contemporary empirical research demonstrates that better formal institutions for contract and contract enforcement tend to generate more extended trading networks.[3] The evolution of informal rule of conduct can have similar effects.

The main hypothesis of this book can be regarded to be part of the new institutional economics research program, if the term "informal institutions" is elastic enough to include ethical theories, maxims, and dispositions.[4] Informal norms and normative dispositions are likely to precede and complement formal institutions for reasons discussed in the previous chapter.

Many of the advantages of life in communities are associated with specialization. Some specialization occurs simply because of variation in the interests and natural skills of the individuals in the community. Such "natural specialists" tend to acquire expertise in their specialties, which is to say that they tend to be or become more proficient than the average person at those activities. As a consequence, specialization tends to increase a community's supply of useful goods and services. Such increases improve a group's ability to survive variation in life's many hazards, which is doubtless part of the reason that the places where settled communities emerged attracted residents.

This natural specialization is radically increased by possibilities for exchange. Among the ancient trades, only gatherers, hunters, and farmers can survive by consuming their own goods and services. Clothing, shelter, pottery, and related tools are all useful, but not edible. Exchange is thus a prerequisite for many forms of specialization. This chapter demonstrates that a subset of norms and their associated dispositions, such as honesty, promise keeping, and diligence tend to expand the feasible domain for exchange and production, and thereby specialization.

This chapter uses elementary game theory to explore how ethical dispositions can increase the domain of exchange by reducing various problems associated with trade, team production, and commercial networks.[5] It also demonstrates that markets tend to encourage the development of

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[3] See for example Scully (1988), Rodrick, Subramanian, and Trebbi (2004), or Haggard and Tiede (2011).
[4] North (1992) explicitly includes rules of conduct among what he terms informal rules, although he does not explicitly discuss ethics or normative dispositions.
[5] Of course, it is not ethics alone that generated trading networks. The gradual improvement of methods of production, transportation, and storage are also important. The emergence of various money goods extended the variety of trades by eliminating the necessity for reciprocity or a coincidence of wants required for the direct exchange of goods and services.

such ethical dispositions; although for reasons mentioned in chapter 1, this tends to be a slow process.

Although relatively small centrally managed production and distribution systems are possible, it is most likely that specialization emerged gradually as productivity gains from specialization were discovered and as rules of conduct necessary to support exchange and contracting became commonplace. Specialization, in turn, made settled lives in villages and towns more viable, by increasing the resources available for sustenance, public services, and defense.

II. Gains to Trade without Transactions Costs among Honest Trading Partners

As true of other potential benefits of community, the realization of mutual gains from trade and specialization are not always easy. If they were, many other animals besides humans would have extensive networks of exchange. The difficulties include those pointed out by Hobbes: an individual or group that wants what another party initially controls may simply use force to attempt to take that controlled by the other. The result of such choices is the Hobbesian dilemma if similar choices are made by most persons in the region of interest and those persons have roughly equal ability to organize and produce force.

After rules against takings and rules that determine who controls particular resources emerge, such "taking" transactions become less common, and voluntary transactions tend to replace ones determined by relative strength. Such basic property rights allow some trading to take place. An individual that is acknowledged to control a resource of interest may voluntarily shift his or her control over that resource to another person or group. Gift transactions are instances of such unilateral shifts of control. When two such parties are acknowledged to have control over two or more valued resources, they may agree shift control over some of their resources from themselves to the other. Such dual voluntary shifts in authority characterize both relationships of reciprocal gift giving and between buyers and sellers of goods and services. It is "ownership" of oneself that allows one to informally trade favors with others, and to exchange services for money or other goods.

Both control over resources and the ability to shift that control among persons are prerequisites for voluntary exchange. However, property rights alone are not sufficient to generate flourishing markets. A variety of other difficulties must be overcome to produce extensive trade and

production networks.

Voluntary exchange as represented in most economic textbooks occurs simultaneously without informational, law enforcement, and related problems. In the competitive model, prices emerge from the impersonal forces of supply and demand, and both the products sold and their costs are fully understood by both sellers and buyers. In simple monopolistic and monopsonistic models, prices are set by sellers or buyers, rather than by supply and demand. In the usual textbooks settings of such asymmetric dealings, buyers and sellers are nonetheless also presumed to know everything relevant for the purchase and sale of the goods or services of interest. The supporting laws and informal codes of conduct required for such easy transactions are neglected so that relative prices can be analyzed.[6]

Unfortunately, it is not always clear what is given up and what is gained through exchange and contract. Uncertainty about what is being offered and agreed to—the reliability of the descriptions and promises made—reduces anticipated gains to trade, which tends to reduces the number and extent of the trades that take place. In this chapter and the next, the focus is on how informal rules of conduct generate sufficient certainty and value that trade and production can take place at prices that are mutually agreeable. It is such internalized rules of conduct—or ethical dispositions—that largely determine the extent of commercial networks. These forms of what others have termed "social capital" are arguably prerequisites for the emergence of extensive market networks.

Textbook Representations of Voluntary Exchange

Table 7.1 represents the exchange setting of textbook economics as a simple game between sellers and buyers. The seller makes an offer (possibly by placing goods in a display of some kind with a price written on the display). The buyer decides to accept the offer or not. Every trade involves making and accepting offers.[7] There are no transactions costs and the goods or services to

[6] Textbook treatments of market exchange are for some reason uninterested in the size and scope of markets, possibly because they implicitly take the existence of a commercial society as their point of departure. Other literature, as with the economics literature on contracts and torts, explicitly address many of the problems addressed in this chapter. However, they consider legal solutions, rather than ethical ones proposed in this chapter. Without ethical dispositions, contracts would have to be far more complex, commonplace, and detailed than they are.

[7] See Vernon Smith (1962) for an experimental demonstration that a process of offers and acceptance can generate equilibria similar to those of competitive markets. Experiments based on his induced preference methodology are often used in classroom demonstrations of how market prices emerge from decentralized decision making (Holt 1999). Nozick (2913) uses the offer and acceptance vocabulary to develop implications of voluntary relationships.

be exchanged are well understood by both parties. Offers can be made or not by Friedrich, and accepted or not by Adam. Gains to trade are assumed to exist. The payoffs again are in terms of an index of individual well-being: utility or net benefits. Yet even in this simple setting, trade is not an entirely automatic process.

Table 7.1: An Exchange Game without Transactions Costs

		Friedrich (Seller)	
		Make offer	Don't
Adam (Buyer)	Accept Offer	(A , F) (3, 3)	(A , F) (0, 0)
	Don't	(0, 0)	(0, 0)

The exchange game has two potential Nash equilibria, although one dominates the other. Making and accepting (or soliciting) offers is a weakly dominant strategy for each potential trader in this setting, because there are potential gains to trade that can be realized and there is no cost for making or accepting offers. Adam is at least as well off accepting the offer as rejecting it, no matter what Friedrich does. Similarly, Friedrich is at least as well off making the offer as not making it, regardless of what Adam does. Nonetheless, the no-trade outcome is also a Nash equilibrium. If no offer will be made by the seller, nor purchase by the buyer, neither trader can make themselves better off by changing their own strategy choice, given the other's choice.[8]

Nonetheless, the make and accept offer strategies weakly dominate the "don't" strategies, in that each player is at least as well off from making or accepting the offers characterized by the cell payoffs as not. This implies that the upper left-hand corner is the most likely outcome of this trading game. If there are no costs associated with making or accepting offers, Friedrich will make

[8] As in the previous chapter, the matrices can be interpreted either as one-shot games or as repeated games in which the payoffs are present discounted values (net benefits) for the pure strategy combinations characterized by the tables. In the second case, the strategies be thought of as offers and acceptances of long-term subscriptions or contracts to a particular service and series of purchases.

an offer to Adam that will make them both better off, and Adam will accept the offer. In such settings, all mutual gains from exchange are realized.[9]

Note that strong assumptions are required for the above outcome to emerge. Offers must be costless to make, the offers must always be correctly understood, and no possibilities exist for simply taking what is wanted. Neither law nor ethics improves outcomes in such a setting, beyond the rules required to define and shift the control over the goods traded. This simplicity disappears when transactions costs and uncertainty are taken into account.

III. Gains to Trade with Transactions Costs among Honest Trading Partners

Let us modify the choice setting by assuming that making and accepting offers takes time, attention, and energy, which are scarce resources. Suppose that both making and accepting offers costs 1 unit of the measure of payoffs. The seller may have to travel to a particular location (a shop or marketplace) and the buyer may have to make a special trip to observe and evaluate the offer of goods for sale. Traders are again assumed to be well-informed about the details of the offers made. There is neither fraud nor misunderstanding of the terms of trade.

This choice setting is characterized in table 7.2. Transaction costs affect the net gains to trade that are ultimately realized and the off-diagonal payoffs that occur when offers are made but ignored or offers sought but not made. The existence of transactions costs transforms the bargaining game into an assurance game. Assurance games are similar to the coordination games discussed in chapter 6. There are two possible Nash equilibria. However, in an assurance game one equilibrium is regarded by all game participants to be better than the other. Again, either equilibria may emerge from individual decision making.

[9] This is the hypothetical setting of what has come to be called the Coase theorem. In the first half of Coase (1960), the properties of a trading environment in which there are no transactions costs or uncertainty is explored. Coase argues that all gains to trade are realized in such settings, as long as ownership rights are clearly defined and tradable. Zero transactions costs are taken to imply that all organizational and trading problems can be overcome. In the second half of that article, Coase argues that the assumptions of the first part are unlikely to obtains, and so institutional details matter, which is to say they affect economic development.

Table 7.2: Exchange Game with Transactions Costs

		Ronald (Seller)	
		Make offer	Don't
Douglas (Buyer)	Accept Offer	(D , R) (2, 2)	(D , R) (-1, 0)
	Don't	(0, -1)	(0, 0)

There are no dominant strategies in this game, because the best choice depends entirely on what the other does. Douglas will not look for an offer (accept) if he anticipates that Ronald will not make one, because Douglas would bear the transactions cost of doing so, without realizing gains to trade. Similarly, Ronald should not bother to make an offer if he anticipates that Douglas will not look for or accept such offers. Potential gains to trade may exist, but may not be realized, because making and accepting offers is costly. Consider, for example, all the "treasure" that lies buried in basements, attics, and closets that could have been sold on one of the internet selling services, but isn't. Some is sold (as at the top left cell), but much is not that could have been (as at the bottom right cell).

Trades are more likely to take place if people in the community of interest are predisposed to trade, as they would be if they exhibited Adam Smith's "propensity to truck, barter, and exchange one thing for another." In such cases, transactions costs may be offset by the joy of trading. A similar propensity would be associated with normative dispositions that regard trade to be an inherently virtuous activity because, for example, it increases aggregate utility.

Table 7.3 represents such internalized predispositions to trade as, V, a benefit associated with attempting to trade that is independent of whether a trade actually takes place or not. If the trading propensity is sufficiently strong, making offers and accepting them becomes the dominant strategy for each player, and the potential gains to trade are realized. In table 7.3, V>1 is sufficient to assure that the potential gains to trade are realized.

Table 7.3: Gains From Trade with Transactions Costs in a Market Supporting Culture

		Friedrich (Seller)	
		Make offer	Don't
Adam (Buyer)	Accept Offer	(A , F) (2+V, 2+V)	(A , F) (-1 + V, 0)
	Don't	(0, -1 + V)	(0, 0)

Given cultural or genetic support for trade, all gains from trades with transactions costs less than V are realized, as long as those engaged in trade fully understand the terms of trade. Other more costly trades remain problematic, which limits the extent of commerce in the community of interest.

The opposite occurs when there are predispositions against trade, as for example in Thomas More's utopia. If guilt rather than virtue is associated with trade, then $V<0$, and the potential gains to trade are reduced, rather than increased by internalized norms. In such cases, the lower righthand equilibrium of table 7.2 is supported rather than undermined by normative dispositions. In a community where such internalized norms are commonplace, only transactions that yield relatively large gains from trade (in the absence of such norms) will ever be realized. In the case illustrated, trade will not take place at all if $V<-2$.

For a given distribution of potential gains to trade and transactions costs, the greater are the normative supports for exchange, the broader markets tend to be, other things being equal. The greater the normative opposition to commerce, the higher effective transactions costs are, and the smaller market networks tend to be, other things being equal. An increase in Smith's propensity to truck and barter tends to increase the extent of trading networks and a diminution tends to reduce it. Internalized normative dispositions affect the extent of trade by altering the subjective rewards of market transactions.[10]

[10] Technological innovations may also reduce transactions costs or increase the joy associated with shopping. For example, Richard may establish an "offer stand" or store front in a visible place so that all passers by can see what he has on offer. This allows buyers to know that offers have been made, and they can simply reject or accept the offer

IV. Market Support for Ethical Sellers

Transactions costs are not simply the time and energy spent making and soliciting offers. The offers themselves normally have to be assessed, because the terms of trade are not always known or obvious. In order to identify those few purchases that are "worth it," buyers invest time and attention to assess the quality of the goods on offer and the terms of trade (direct and indirect costs, risks, etc.). At the level of an individual, most possible trades have net losses rather than benefits associated with them—the most common amount of the goods and services on offer in a large grocery store purchased by an individual consumer or family is zero. Sellers, similarly, take steps to be assured that they will be paid for the goods sold. Cash may be examined to determine whether it is counterfeit or not, credit and cash cards are checked to makes sure that they are active and include credit or funds to pay for the goods desired. The complexity of the products on offer and the payments to be made imply that honest errors can be made among even reasonably well-informed buyers and sellers. Thus, many transactions are a bit risky for either buyers, sellers, or both. Either or both may anticipate regrets (net losses) from having participated in particular exchanges.

A related problem is the possibility of fraud. The complexity of many goods and services and their purchase prices allow buyers to be fooled by a seller into purchasing a good or service that not as useful or valuable as claimed. Similarly, a seller might be fooled into agreeing to a sale, but be paid less than expected. Neither all sellers, nor all buyers are honest. Such amoral or immoral behavior can make it difficult to realize many of the potential gains from trade.

Pragmatic Sellers

The effects of fraud on the extent of trade can be analyzed by adding a row to the game characterized in table 7.2. The new row characterizes a seller's profits from making fraudulent offers. An honest offer accurately describes the product and terms of the product on offer, as in the illustrations above. A fraudulent offer is one in which the true quality of the product or service

made, rather than seek out offers from potential sellers one at a time. Sellers may further reduce transactions costs by locating next to one another. As transaction costs fall, the normative predispositions sufficient to assure trade also fall, although they remain helpful as long as transactions costs are greater than zero. Such standing offers may also increase the joy of shopping, by providing a new source of amusement and entertainment as new or exceptional products are noticed by shoppers.

offered for sale is less than that which the seller claims and the buyer expects. Fraud-based profits are possible whenever lower-quality goods or services are less costly to produce than higher quality ones and the differences between high- and low-quality versions of otherwise similar products are not immediately obvious to potential purchasers. Examples include automobiles, healthcare, and bottles of wine. Ex post, the subjective gains from trade realized by the buyer are greater from an honest offer than a fraudulent one, because of differences in quality.[11] The effect of fraud on exchange is characterized in table 7.4.

Table 7.4: Markets with Potential Fraud

		Gordon (buyer)	
		Accept or Solicit Offer	Ignore All Offers
Richard (seller)	Fraudulent Offer	(R ,G) (3, -3)	(R , G) (-1, 0)
	Honest Offer	(2, 2)	(-1, 0)
	Do Not Make Offers	(0, -1)	(0, 0)

The trading equilibrium is clearly affected by the possibility of fraudulent offers. There is again no single dominant strategy. If Richard expects Gordon to accept his offer, then he should make a fraudulent one. If Richard expects Gordon to refuse or ignore the offer, then he should not bother making either type of offer, because making offers is costly. Gordon will only accept an offer if he anticipates an honest one, but given Richard's incentives, this is not likely. However, there is just one Nash equilibrium, rather than two in this setting: the lower right-hand one in which offers are

[11] For the purposes of the illustration, the possibility that fraudulent and honest offers might produce the same subjective benefits for the buyer—as with excellent counterfeit works of art—are ignored. A buyer, might for example, benefit subjectively from the idea that he or she has an original Picasso until it is identified as a copy. Placebo effects may be larger than the direct effect of a new drug or procedure. Such cases can be acknowledged to exist without implying that the one(s) illustrated are rare or unimportant.

neither made nor accepted. The potential profits of fraudulent offers can eliminate the market for some products.[12]

The no-trade equilibrium is problematic from a utilitarian perspective because it fails to maximize aggregate utility (4>0). It is also problematic from a Paretian perspective because there is a feasible outcome that could make both parties better off without making anyone else worse off. A contractarian would note that the formation of an organization to punish fraud would be useful, and would be unanimously agreed to by both buyers and sellers if anti-fraud enforcement be done at a small cost (here less than 4). The problem of fraud may be problematic from the perspective of community survival, insofar as reduced trade reduces specialization and a community's material resources for overcoming emergencies.

If Erasmus' characterization of medieval merchants was accurate—that sellers routinely cozen and cheat their customers—one would anticipate relatively small trading networks in which only easily assessed goods and services would be traded. And, of course, medieval markets were small and simple by comparison with those in today's commercial societies. In markets where fraud is likely, relatively little trade takes place.

Ethical Sellers

The likelihood of fraud can be reduced in several ways. It can be reduced if sellers post bonds and other warrantees (such as a money back guarantees). Unfortunately, claims about bonds and warrantees can also be fraudulent. The likelihood of fraud can also be reduced by formal laws against making false claims. However, court cases against fraud are costly, which makes anti-fraud laws an effective deterrent only for frauds involving relatively large losses that can be recovered through lawsuits or criminal proceedings. Smaller frauds will not be curtailed by such laws. The likelihood of fraud can also be reduced by the ethical dispositions of sellers. Internalized rules of conduct can increase the subjective payoffs associated with honest offers and/or reduce those

[12] This market can be regarded as a special case of the market for lemons developed in Akerlof (1970). If the game were restricted to the upper four cells, neither of the potential traders would have a pure dominant strategy. In that case, mixed strategies may be adopted by each. Repeated dealings may also affect the payoffs associated with honest and fraudulent offers, although there are cases in which the present discounted value of a long series of transactions have payoffs with relative magnitudes that are the same as in Table 7.4.

associated with dishonest ones. The extent to which such dispositions reduce fraud depends on their strength and the ability of buyers to identify relatively honest sellers.

The effect of an internalized general principle against telling lies or a narrow maxim with respect to misleading one's customers can be represented in the same manner as other internalized normative dispositions. Violating such rules of conduct may induce feelings of guilt that reduce the fruits of fraud or following them may induce feelings of virtue or praise worthiness that increase the subjective rewards associated with honest offers. The payoffs of table 7.5 characterizes the effect of guilt associated with making fraudulent offers. A sufficiently strong guilty reaction from making fraudulent offers, G>1, can cause the honest trading cell, (2,2), to emerge as a possible equilibrium.

Table 7.5: Markets with Fraud and Guilt from Fraudulent Behavior

		Gordon (buyer)	
		Accept or Solicit Offer	Ignore All Offers
Richard (seller)	Fraudulent Offer	(R ,G) (3-G, -3)	(R , G) (-1-G, 0)
	Honest Offer	(2, 2)	(-1, 0)
	Do Not Make Offers	(0, -1)	(0, 0)

To benefit from trades in a market that includes both ethical and pragmatic sellers requires potential buyers to be able to be able to fully understand the terms of trade or be able to recognize (relatively) honest sellers. For a one-time purchase, what might be called the ethical solution requires buyers to be able to assess a seller's character, which is arguably one of the skills that most persons acquire through time, although it is rarely perfect.

As specialization emerges, some sellers may acquire reputations for honest dealings with their buyers throughout within their community. Such reputation effects may encourage "honest dealings" even in the absence of moral dispositions, but such pragmatic rules also tend to produce

the habits of thought and action associated with honest or fair dealing.

As honest sellers proliferate, exchange networks become more extensive, because the types of products that can be traded increases. Such sellers, as true of Kant's praiseworthy tradesman, would not exploit their informational advantages or misrepresent the quality of their products to unsophisticated or overly trusting buyers. Nonetheless, this game still has two possible equilibria, namely those associated with the assurance game above in which only honest sellers were assumed to exist. As in the previous case, additional support is needed to realize all potential gains to trade because of other transactions costs.

It is interesting to note that avoiding guilt as opposed to the rewards of virtue have slightly different effects in this case. If a sufficient increase in utility is associated with the making and accepting honest offers (V>1), a unique Nash equilibrium exists, namely the one illustrated in table 5.1, in which honest offers are made and accepted. Small differences among similar ethical systems can thus effect the extent of trade and specialization.

Implicit Assumptions of the above Analysis of Fraud

The choice setting characterized by table 7.5 was contrived to make the problem of fraud as difficult to overcome as possible through market-based behavior. The purchaser is completely unable to distinguish between fraudulent and honest sellers or offers before the exchange is undertaken. This does not require the offer is a once in a lifetime event, but in cases where the payoffs reflect repeated purchases, associated problems must take many years to emerge and be recognized—as often the case with products or investments that are claimed to improve one's health or wealth. If the binary assumption about the recognition of fraudulent offers is replaced with a probabilistic model of fraud recognition, the profitability of fraudulent transactions diminishes as the probability of detection (P) increases, and weaker norms will be sufficient to solve the problem of fraud. It is, however, only in cases in which fraud is always unprofitable (as with P=100%) that the rules of conduct adopted by sellers are irrelevant for buyers.

The choice setting illustrated in Table 5.7 also assumes that fraud is never punished by the community's legal system. The law may impose fines and jail time, rather than feelings of guilt, which can also reduce the problem of fraud. Given a well-functioning legal system, it might be argued that internalized codes of conduct are less important than implied by the above analysis.

However, court proceedings are not costless. It takes, time, energy, and money to bring both criminal and civil cases to court. Buyers will only undertake such proceedings if their recovered losses plus the value of revenge exceeds the cost of court proceedings in terms of time, attention, legal fees, and lost income. The more often court proceedings need be applied to recover losses from fraud, the more risky market transactions are, and the less expected gains to trade tend to be and the smaller market networks tend to be—even with perfectly reliable court outcomes. Moreover, the persons working in legal systems may be open to bribes, rather than completely honest enforcers of the laws against fraud.

The mere existence of court costs implies that some frauds will not be brought to court. The gains from trade from many day-to-day transactions are small and in such cases it never pays individual to bring a case to the legal authorities. Insofar as such "small" net gain trades are among the most common transactions undertaken in market networks, it is ethical and reputation-conscious sellers that make markets for such goods and services possible. Since the profits from fraud in "small" net gain transactions are also small, relatively weak internalized dispositions are sufficient to safeguard those transactions.

With respect to continuous dealings, it bears noting that not all small transactions are repeated frequently. One may purchase food, clothing, and medicines while traveling. One may only purchase a box of salt, a bottle of aspirin, new computer, or bicycle only once every few years.

It also bears noting that the reputation that emerges from repeated dealings or through social networks tends to reflect the rules of conduct in place at particular firms. A firm with a "good" reputation either has "good" rules of conduct for its employees or the practice of hiring only "good" persons for positions within the firm. Such firms can be regarded as ethical organizations. A "bad" firm either has no rules or unsavory rules with respect to dealings with its customers and suppliers. Firm A is always honest with its customers, can be trusted, always delivers on what is promised, stands by its warrantees, never takes advantage of ignorance, and so on, whereas you never can trust firm B to do the same.

When an economist argues that a firm's reputation will prevent fraud, he or she is implicitly arguing that successful sellers have codes of conduct that require their customers to be treated honestly and fairly. It also bears noting that efforts to adopt "appropriate" rules of conduct require

Smith's sympathy or fellow-feeling or Aristotle's principle of reciprocity to be applied by sellers to their customers. What is that my customers want? How can I improve my products for them? How can I make shopping a more pleasant, efficient, and less risky process for them? The question most often heard when one walks into a contemporary service-orientated store is "can I help you?" rather than "how can I profit from you?" even though the store's owner/manager is likely to care far more about the later than the former.

Demand-Side Support for Ethical Dispositions

That buyers prefer to deal with ethical sellers is implied by the choice settings illustrated in tables 7.4 and 7.5. Table 7.4 characterize the opportunities confronting customers at an unethical seller, and table 7.5 those confronting consumers at an honest or ethical seller. Given a choice, only the ethical seller will be frequented. As this distinction becomes widely known, most consumers will purchase their goods from honest sellers.

In this manner, consumer choice tends to create markets in which sellers have adopted and enforced codes of conduct that reduce the risk of fraud and other transactions costs. Consumers do not necessarily care about the ethics of a firm's employees, per se, but they do care about risks and costs associated with buying goods and services. Competition for consumer spending thus induces firms to supply exchange facilitating codes of conduct for their employees, as well as quality control for their goods and services.

This implies that an organization's code of conduct may well be more virtuous than its owners or employees. Nonetheless, such codes of conduct are arguably more likely to be faithfully implemented by dutiful personnel than their pragmatic counterparts, other things being equal. If so, even pragmatic firm owners will have a hiring preference for persons with supportive moral dispositions over other pragmatists. The quest for a good reputation tends to generate a demand for "good" employees, where "good" is determined by the transactions-cost reducing interests of a firm's consumers.

Although consumers in general may care little about the ethos of a firm or of their employees beyond that required to reduce transactions costs, a subset of consumers may care about the specific internalized norms of a firm's owners and employees. Such customers are willing (by definition) to pay a higher price for the services provided by persons they deem virtuous than for

services provided by pragmatists who may follow similar rules. When a sufficient number of such consumers exist, specialty shops may provide the additional moral services, as with stores that sell "fair trade" goods or specially shops for orthodox members of various religious and ideological groups. As the numbers of such "ethical consumers" increase, pragmatic retailers may start to espouse normative positions to attract such consumers. For a firm or firm owner to express indifference to the ethical concerns of large groups of consumers would risk losing a significant part of their potential customer base or trading partners.

V. Ethics and Production by Teams

The exchange of goods and services created by single persons represents only a very small fraction of the transactions in contemporary markets. Most goods and services in commercial societies are produced by groups of individuals--teams--assembled with their productive abilities in mind. Agricultural crops are normally grown by teams of farmers and farm hands. Cloth and clothing are normally created by teams of persons using a variety of machines to transform fluff into thread, cloth, and clothing. Lumber is produced by groups of persons who cut trees down, transport the wood to sawmills, saw it into more or less standard sizes, after which it is transported to storefronts and construction sites by still other teams.

Each stage of specialized production involves groups of people using equipment developed by other teams of producers undertaking a series of value increase transformations. Small teams were used in former times to produce particular types of food, cloth, pottery, homes, defensive structures, and religious edifices. Contemporary products such as computers and cell phones are created and manufactured by a series of very large organizations, most of which have thousands of team members. This is not to say that large teams were never used in the past, but it is true that large teams of specialists are more commonplace today than they were in the past.[13]

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[13] Production by very large teams took place in ancient times as evident in the monumental architecture of ancient Egypt and Greece, and by the great cathedrals of medieval Europe. Nonetheless, large teams were not commonplace in the private sector until the late nineteenth century. The largest organizations in the ancient farming and lumber industries now employ far more people than earlier ones. Monsanto, a leading seed producer, employs over 20,000 persons working in 66 countries. Weyerhaeuser, a leading lumber company, employs more than 10,000 persons and has tree farms covering more than 6 million acres. (The numbers are from their respective corporate websites.)

Mechanization often reduces the size of the team necessary for a particular stage of production, but the production of the machines used normally increases the overall size and productivity of the team.

The shift to production and distribution by large organizations occurred partly for technological reasons. New methods of production and organization were created by innovations in manufacturing and transport equipment and also by improvements in techniques for managing large production teams. However, older labor intensive small-scale production technologies continued to be used in countries and regions that did not industrialize. Thus, it seems likely that regional differences in culture and institutions also contribute to the use of large teams in productive enterprises.

An important issue for the purposes of this book is the degree to which differences in internalized norms affect the speed and extent to which industrialization took place in the nineteenth century. Max Weber, among many others, argued that large scale economic enterprises require the support of internalized norms by team members. He also suggested that the ethical systems commonplace in pre-capitalist systems tended to reduce opportunities for such organizations, and thereby reduced prospects for exchange, specialization, and mechanized production.

> [W]ith the breakdown of tradition and the more or less complete extension of free economic enterprise, even to within the social group, the new thing [large scale production] **has not generally been ethically justified and encouraged, but only tolerated as a fact.** And this fact has been treated either as ethically indifferent or as **reprehensible**, but unfortunately unavoidable. **This has not only been the normal attitude of all ethical teachings, but, what is more important, also that expressed in the practical action of the average man of pre-capitalistic times**. ...
>
> A man does not "by nature" wish to earn more and more money, but simply to live as he is accustomed to live and to earn as much as is necessary for that purpose. **Wherever modern capitalism has begun its work of increasing the productivity of human labor by increasing its intensity, it has encountered the immensely stubborn resistance** of this leading trait of pre-capitalistic labor. And **today it encounters it the more, the more backward (from a capitalistic point of view) the laboring forces are with which it has to deal**. (Weber (1909/2012: KL 271-96).

The extent to which large teams have replaced small teams in production and distribution varies widely around the world. One partial explanation for that variation is differences in culture, as implied by Weber's discussion.[14]

[14] That cultural differences are likely to be part of the explanation is implicit in many international studies that use country-fixed effect techniques. These "dummy variables" are nearly always significant and often account for a good

Team Production and the Shirking Dilemma

The groups of men and women that produce goods and services can be considered teams and the process through which this occurs as team production (Alchian and Demsetz 1972). The problem confronted in team production is analogous to the free rider problem of the previous chapter. As each person increases their efforts, the productivity of other team members is increased, but these benefits are shared, rather than realized by the person sacrificing leisure to work harder. This tends to cause practical men and women to under apply their effort and talents to the productive activity being undertaken, which can occur even in cases in which team members are paid their full marginal value product (Congleton 1991).

To illustrate this problem, assume that a team is initially organized as a "natural cooperative" and share the output produced equally. Each person participates in the team activities for 8 hours. For the purposes of illustration, the team's output is assumed to be two times the total effort invested in production. Suppose that effort is unobservable, as when a group tries to lift a heavy object or search for fruit to be harvested. Suppose that the value of an hour of shirking is equivalent to 1.5 units of the team's output. The benefits of leisure (the absence of effort) are realized only by the person(s) shirking. In contrast, any increase in team output is shared among the team members.

Table 7.5 illustrates the resultant "shirking" dilemma for a two-member team. The payoffs are net benefits measured in output units. They include a team member's share of the team's output plus the value of the his or her leisure.[15]

deal of the explanatory power of the statistical models estimated.

[15] Although not important for the purposes of this illustration, some readers may be interested to know that the individual cell payoffs for Armen are $1.5\ (8-E_A)+ 2(E_A+E_H)/2$ where E_A is the number of hours Armen devotes his energies to team production, rather than shirking. The payoffs for Harold are Armen are $1.5\ (8-E_H)+ 2(E_A+E_H)/2$. ($E_A$=4, E_H=4) is the Nash equilibrium of the continuous version of this game as well. The joint optimum is an 8 hour day for each.

Table 7.6 The Shirking Dilemma of Team Production (in Natural Cooperatives)				
		Harold (Hours of Effort)		
		8 hours	6 hours	4 hours
Armen	8 hours	(A, H) 16, 16	(A, H) 14, 17	(A, H) 12, 18
Hours of Effort	6 hours	17, 14	15,15	13, 16
	4 hours	18, 12	16, 13	14, 14

The Nash equilibrium is at the lower right-hand corner of the table. That a shirking problem exists is implied by several normative theories. To the extent that shared output or net revenues can be interpreted as output, income, or utility levels, aggregate utility is not maximized. From the Pareto and contractarian perspectives, there are many feasible moves that could make at least one person better off without making another worse off. That output produced by such natural coops is less than that which would most advance the interests of team members may also disadvantage their communities. Community members will achieve less from their resources than they could have, which disadvantages community members and may reduce the community's prospects for survival.

Such possibilities also create incentives for formeteurs and organizational leaders to innovate with respect to a organization's hiring and compensation procedures.

The Productivity of a Work Ethic

There are many possible solutions to shirking problems of natural cooperatives, although none work perfectly. This is largely because whether a team member is working as well as possible is difficult to observe. Even individual team members may not know how well they can potentially work. However, to the extent that this can observed externally or internally, better organizational rules and conditional compensation schedules can help motivate team members to realize their potential as contributors to their team's production. Such rules may be developed externally, as for example natural coops are replaced by team organized by formeteurs, who develop rules to encourage the proper effort level, as has been explored in the efficient contract literature. Community-wide laws might also adopted that penalize shirking (idleness) in general, as in the early

Puritan colonies of Massachusetts and during some periods in ancient Athens. A third possible solution is to recruit team members that have an internalized work ethic or similar norm and to pro.

An internalized work ethic may take the form of a duty to work vigorously and diligently that brings forth guilt or internal disapprobation when violated, as incorporated into table 7.7, or as a subjective reward from working diligently (pride or self-esteem), or a combination of the two. Table 7,7 demonstrates that a sufficiently strong work ethic can improve the outcome for every member of the team. If the subjective guilt penalty associated with shirking is greater than one, G>1, the result is increased utility or net benefits for all. In this case, guilt may be said to indirectly increases each individual's welfare (and income) by producing a more effective team. The fact that "shirking" has a negative connotation is an indication that many of us have internalized norms regarding appropriate work effort.

Table 7.7 How a Work Ethic Reduces the Shirking Dilemma

		Harold (Hours of Effort)		
		8 hours	6 hours	4 hours
Armen	8 hours	(A, H) 16, 16	(A, H) 14, 17-G	(A, H) 12, 18-2G
Hours of Effort	6 hours	17-G, 14	15-G,15-G	13-G, 16-2G
	4 hours	18-2G, 12	16-2g, 13-G	14-2G, 14-2G

Norms that associate disapprobation or disesteem with failing to perform one's duties at team production tend to increase the productivity and viability of teams. Other community norms may undermine team production, as for example, praising persons for cleverly avoiding work tends to reduce the effectiveness of team production and team output.[16]

[16] For more on the economics of a work ethic see Congleton (1991) and Buchanan (1997). Studies of the effects of work ethics on work habits are more common among non economists as with Greenberg (1977), Eisenberger and Shank (1985), Furnham (1984), and Miller, Woehr, and Hudspeth (2002). Eisenberger and Shank's (1985) research

VI. Recruiting and Rewarding Internalized Ethics

Of course, it is one matter to say that team production is increased by hiring persons with a work ethic and another to assemble such teams. Identifying and recruiting such team members increases the viability of many, perhaps, most organizations.

In communities, where persons with productivity enhancing normative dispositions are rare, formeteurs and their recruiters are likely to assemble less that the perfect team. Table 7.8 illustrates the tradeoff confronted by a formeteur attempting to assemble a team from a given a menu of persons with different skill sets and ethical dispositions. The tasks for which the team members are being recruited are assumed to ones for which monitoring is costly, and so a propensity to take direction and work diligently when not monitored is as important as task-related skills. In such organizations, a skillful person who is inclined to shirk will produce less of value than a less skillful person who works diligently at his or her assigned tasks.

Table 7.8 Menu of Potential Team Members and Marginal Products

	High Skill	**Mod. Skill**	**Low Skill**
Strong Ethics	10	7	6
Mod. Ethics	8	6	5
Weak Ethics	6	5	4

If the reservation wage of all nine types of potential employees is the same, the formeteur will hire the type (SH) worker first, the one with the highest skill and strongest work ethic. The second hired is the person with relatively strong supportive ethics and moderate skills (SM). That person works hard enough to offset his or her lower skills. The third person hired is the person with a modest work ethic but high skills (MH). and so forth until the new team is staffed out or departing members replaced.

Low ethics in this context does not imply criminal behavior, but rather a weakly internalized vector of relevant propensities for honesty, industry, prudence, and so forth that contribute to team productivity, and thus a greater propensity to shirk from one's duties to the team or organization

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suggests that a work ethic can be inculcated among those lacking one.

when not closely monitored. In other respects, such persons may be strongly ethical.

When the same skills and dutiful propensities have value in several organizations, wage rates will tend to be correlated with marginal productivity associated with productivity enhancing dispositions, because each potential employer can pay potential team members up to their full marginal products (contribution to team output), but not more than that. Given the productivity differences of table 7.8, high-skill employees \ tend to earn more than low-skill employees, other things being equal, and employees with desired normative dispositions tend to earn more than those with weaker ones, other things being equal.

Tradeoffs between these two productive traits imply that some high skill workers are paid less than their low skilled counterparts, because of differences in productivity relevant ethical dispositions. It productivity enhancing ethical dispositions, rather than ethical dispositions in general, that are rewarded by markets.[17]

Economizing on Ethical Employees

The effects of ethical dispositions vary with the tasks a team member is to undertake. Some tasks are relatively easy to incentivize and monitor; others are not. The extent to which ethical workers are valued by employers also varies with the extent to which fraudulent transactions and defective products are punished by their customers. In cases in which the quality of products is easily discerned, it is often easy to monitor employees. In such cases, internalized work and quality norms tend to be less important than in cases in which monitoring is difficult and the quality of a product can only be assessed after it is sold. In the latter case, the internalized ethical dispositions of a firm's employees (and owners) are important determinants of an organization's reputation and long-term profits—and productivity enhancing ethical dispositions will be a significant hiring criteria. The demand for ethical employees (employees with particular internalized norms) thus varies among firms and among occupations within firms.

[17] In perfectly competitive markets for labor, workers are paid their full marginal value product. This need not be the case if labor markets are less than perfectly competitive or if it is difficult to measure job skills and ethical dispositions. The difficulty of estimating a potential team members true marginal product is one reason why firms devote so much time and energy in their recruiting efforts and why salaries tend to be less fine-grained than the competitive models predict. Assessing an individual's marginal value product is a far more difficult task than most economic models suggest.

For example, honesty has a greater effect on the marginal productivity of persons overseeing the operation of cash registers than on those washing windows. This is not to say that a given window washer may not be more honest than a given cashier, but the quality of a window washer's work is easier to appraise and so his or her honesty is less critical to job performance. Technology matters as well. Cash transactions are easier to monitor in shops using computerized cash registers than in ones using simple cash boxes. That surveys indicate that some industries and professions are more trustworthy than others is consistent with this characterization of hiring practices.

Unfortunately for firms and ethical labor suppliers, differences in internalized norms are not easy to assess accurately before a person is hired. Criminal records, modes of dress, college degrees, religious background, and letters of recommendation can be used to estimate the skills, diligence, and ethical predispositions of potential employees, but only with a significant error term. Performance on the job, to the extent that it can be determined, is the ultimate test, but this cannot be observed until a person is hired, and the cost of being wrong can be considerable. Both interviews and trial periods would be less commonplace and shorter, if reference letters were always completely accurate or if only skill-related differences mattered to firms and other organizations.

That markets reward (or are inclined to reward) persons with a subset of ethical dispositions implies that there is no necessary conflict between a life in commerce and being an ethical person. Indeed, firm owners will encourage and reward all internalized norms that increase their bottom lines. They will do so even if firm owners are themselves amoral pragmatists. The usual forces of supply and demand imply that the rewards for ethical dispositions will reflect the distribution of norms within a given community, with scarcity rents being higher in communities where productivity-enhancing norms are relatively scarce.

It bears noting, that supply-side support for ethical dispositions exists only for dispositions that increase productivity. Firms will attempt to avoid hiring employees with ethical dispositions that reduce rather than increase a team's or team member's productivity.

VII. Market Rewards and Individual Investments in Ethical Dispositions

At the level of a society, the distribution of ethics and skills may be taken as given in the short run, because these are largely determined by past decision. They reflect biological and social

evolution, the accumulation and transmission of various rules of thumb, maxims, and principles accumulated over decades if not centuries. At the level of individuals, their ethical dispositions reflect their experience, which are partly consequences of organized educational investments made by families, friends, and communities over several decades. An individual's direct investment in ethical dispositions may be of secondary importance insofar as genetics and experiences during the first decade of ones' life establish a general trajectory for future developments. Nonetheless, to say that changing oneself is difficult is not to say that it is impossible. If we accept Aristotle's characterization of virtue as "unnatural" dispositions accumulated through deliberate practice, or consider Franklin's efforts to choose and perfect his own virtues, it is clear virtue like any other habit or skill can be gradually altered at any point in one's life.

According to Aristotle, Franklin, and many others, ethical dispositions are not all or nothing characteristics but rather reflect the accumulated effects of training, practice, and reflection. They are routines and habits for assessing and choosing action. Smith argues that investments in virtue are made because of the rewards of praise from fellow members of one's community and from a person's own internal impartial spectator. Aristotle and Mill argue that investments in virtue is one of many methods for increasing one's long term happiness, although praise tends to follow and be associated with virtuous conduct. Franklin recommends investments in virtue because they tend to increase one's income and wealth. That the returns from ethical disposition affect the distribution and nature of ethical dispositions play a central role in Spencer's discussion of the coevolution of society and ethics. Only Kant among the scholars reviewed in Part I argues that self-interest and ethics are entirely different realms of choice, although he too believed that an individual's will could be deliberately improved.

In commercial societies, investments in skills that increase one's productivity on teams and in business transactions produce higher incomes. Pecuniary rewards provide incentives for persons to attend college and trade schools and to select fields to specialize in once there. The same reasoning also applies to ethical dispositions that are socially rewarded, whether with praise or higher salaries. Rewards can encourage the development of ethical dispositions as well as useful skills.

The discussion above implies that some virtues are more highly rewarded than others, and rationality implies that these differential rewards will affect the extent to which individuals practice

or otherwise invest in the rules of conduct that gradually produce one's ethical dispositions.

Rationality implies that as pecuniary rewards change for investments among types of human capital, people will adjust their portfolios of human capital at the margin to take account of those changes. This is not because people are solely motivated by material comfort and status, but because they are at least partly so motivated.

Table 7.9 illustrates how the rewards from virtue affect a person's allocation of time among activities, including the production of virtuous habits.[18] The numbers in the cell represent marginal utilities or marginal benefits associated with successive hours of investment in 5 activities, including investments in three virtues. All the activities are assumed to exhibit diminishing marginal returns, as per the usual economic assumption. For purposes of illustration, it is assumed that Ben can only work on one virtue at a time and that the marginal utilities of the five activities are independent of one another. This simplification allows the benefits from various allocations of time to be represented in a table, which is useful for purposes of illustration and not entirely unrealistic.

The shaded cells represent Ben's initial allocation of 16 hours among these activities listed. Such a choice might represent investments in ethical dispositions in a pre-industrial society. This allocation maximizes his (or her) utility from these activities.

Table 7.9 Ben's Allocation of Time and Effort (Cell Entries are Marginal Utility, 16 Hours Allocated)

	Leisure	Work	Honesty	Prudence	Bravery
1 hour	20	30 +s	11 +s	12 +s	11
2 hours	16	24 +s	9 +s	11 +s	10 9
3 hours	12	18 +s	7 +s	10 +s	
4 hours	9	12 +s	6 +s	8 +s	8
5 hours	6	8 +s	5 +s	6 +s	6
6 hours	3	4 +s	4 +s	4 +s	4
7 hours	4	2 +s	6 +s	2 +s	1
8 hours	2	1 +s	4 +s	1 +s	0

[18] This is not to suggest that everyone has Franklin's genius for creating a better self. Parents also play a role in this time allocation insofar as they have their children's long-term interest at heart.

Suppose that commerce expands and the returns to work, honesty and industry all increase by amount *s*. For purposes of illustration, assume that *s* is two utils (s=2) and reflects new rewards (salary and praise) associated with those virtues. Ben's best allocation of time is affected by those rewards and shifts to the pattern characterized by the underlined cells entries. The effect is not a major one in the short one, but may be significant in the long run. An hour of leisure is shifted to gainful employment and an hour of time spent perfecting bravery is shifted to perfecting prudence.

This reallocation of effort illustrates the tension between commerce and virtue that concerned Montesquieu, among others. Some virtues are supported by markets, but others are undermined. Bravery and leisure may be less evident in the post commercial society than in the pre-commercial one. On the other hand, as argued by Spencer and Bastiat, commerce does not uniformly impede ethical development as suggested by More and Erasmus. Indeed, if prudence is regarded to be a more important virtue than bravery, as Aristotle and Smith argue, average virtue may be said to have been increased by the expansion of commerce, as argued by Bastiat and implied by some of Mill's discussion of increases in propensities to cooperate.

Table 7.9 also illustrates how acculturalization operates when persons immigrate from a relatively less commercial society to a more commercial one. As the rewards associated with virtues change, the marginal efforts to acquire those dispositions also change. For example, one can imagine societies in which it is thought to be "good" to be true to oneself and brave enough to ignore what others want from them, even at great cost. In another society, what is thought to be good might be to honor both explicit and implicit agreements, and to be brave enough to honor associated obligations to others even at great personal cost. As one moves from one society to the other, changes in praise, opportunities, and salaries would tend to induce persons to refrain from some forms of bravery and honesty and to demonstrate other forms of bravery and honesty. Through time, new ethical dispositions tend to gradually replace the old.[19]

[19] The above simply follows Montesquieu's reasoning. Unusually brave and bold nonconformists may be well-rewarded in the most dangerous industries. As in all markets, the interplay of supply and demand determine the rewards. If there are more unusually braver and bold persons than jobs for them, wage premiums for bravery will tend to be relatively low. Knight (1921/2006) suggests that risk taking within markets, the bravery of what he calls entrepreneurs, often tends to be well rewarded.

VIII. Conclusions: On the Coevolution of Commerce and Ethics

A market is defined by a network that consists of a series of nodes at which exchange and/or production takes place. Markets can thus be "factored down" into the transactions that take place at typical notes in trading networks. The illustrations developed in this chapter characterize essential aspects of the choice settings that characterize the nodes in market networks. The choice settings explored demonstrate that ethical dispositions can encourage or retard the emergence of market networks through effects on the gains to exchange and team production associated with various nodes in a potential network. At some nodes—e.g. choice settings—ethics will play a critical role and determine whether trade or production takes place. The more trade and production that takes place the more extensive and complex a market network tends to be.

As such, they have a variety of effects on persons in society, including effects on their opportunities and material welfare. This chapter has argued that market networks also have at least modest effects on the ethical principles that persons in a given community tend to internalize. To the extent that trustworthy trading partners and team members can be identified, they will be chosen as trading partners and team members. The persons and organizations that do so will realize larger gains to trade and have more productive organizations. To the extent that dispositions are developed rather than innate, market rewards and the associated esteem accorded relatively successful and ethical persons will lead families to encourage such dispositions in their children and individuals to invest in both developing such internalized norms. They will also attempt to reveal those dispositions to potential trading partners. Market networks can be regarded as a sub network in the social networks that make up a community or society.

Commercial networks and ethical ideas thus tend to coevolve. As ethical ideas and dispositions become more supportive of markets, markets tend to expand. As markets expand, the dispositions that support market gradually become more commonplace. This is a slow process reflecting evolutionary pressures as well as rational choices made by individuals, families, organizations, and governments. And, of course, if the philosophers and psychologists are to be believed, economic rewards are only a subset of the rewards for acquiring ethical dispositions.

The argument and illustrations developed in this chapter are grounded in elementary game theory and a two-part characterization of utility (an index of satisfaction, self-esteem, or happiness)

rooted in a long philosophical tradition.

One of the purposes of Part I was to show that two-part characterizations of man have long been part of careful analyzes of human interests and action, and are not simply an ad hoc device to allow ethical conduct to be analyzed using rational choice models. More recent work by economists, philosophers, pollical scientists, and psychologists could also have been used as the point of departure. For example, Buchanan (1979) distinguished between natural and artifactual man. Nozick (1994) uses a similar characterization of human action in his analysis of the various purposes advanced by ethical principles and internalized rules of conduct. Among those are avoiding temptation, reducing disappointment, and increasing predictability and trustworthiness. Ostrom (2005) uses game theory to analyze how formal institutions and norms affect behavior, noting the survival value of norms. Peterson and Seligman (2004) demonstrate that virtue has a role un understanding both psychological data sets and in understanding how individuals can realize better lives. These more recent perspectives reach conclusions similar to reached by thoughtful men and women from the past, which together suggest that the characterization of choice used in the models is both plausible and that both narrow and broad characterizations of self-interest be justified by a variety of arguments and observations from philosophy, psychology, economics, and political science.

That ethics can increase the productivity of teams has been noted by several economists (Congleton 1991, North 1992, Buchanan 1994, Rodgers 2009), but their arguments have been neglected by microeconomic textbooks (and most economists).This may reflect beliefs among contemporary economists that ethics are beyond the scope of their field of study or possibly an implicit assumption that ethical codes are constant over the period of interest and fully captured by the utility functions or labor-leisure tradeoffs used in their analysis. Either assumption tends to imply that ethics can be ignored for the task at hand. Nonetheless, the analysis of this chapter above suggests that taking account of ethical dispositions and ethical innovations can shed light on both the extent of commerce at a given time and changes in the extent of commerce through time, both of which may account for differences among regions of the world at a given time.

The results of this chapter and the previous one imply that commercial societies are more feasible when particular moral beliefs and internalized duties are commonplace than when they are

not.[20] In this sense, the commercial society may be said to have moral foundations. Without community and market supporting ethical dispositions, extensive markets, and large-scale production would be unlikely, indeed impossible without them.

For example, as utilitarian arguments became more commonplace during the nineteenth century in Europe, it would be natural that markets would tend to expand. Trade tends to increase aggregate utility, which according to utilitarian theory is the only or most robust criteria for determining moral action. The reverse is, of course, also possible as market supporting norms erode or innovations in ethics or technology undermine the rewards associated with market supporting norms, markets may shrink rather than expand. The collapse of an industry or an economy can reduce the rewards from investments in market supporting virtues. This bootstrapping form of intertemporal dependency can produce prosperity or poverty according to the ethical and technological innovations taking place.

Other things being equal, the extent of this subset of social capital—ethical dispositions—have a variety of direct and indirect effects that affect the extent of commercial networks. Several others are developed in the next chapters of this book.

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[20] Firm owners might be tempted to reward what might be called "tribal ethics" whereby fellow team members inside a given firm are treated more ethically than those outside the firm. However, competition for customers tends to moderate this temptation.

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Appendix: Contractual Solutions to Team-Production Problems, Economizing on Ethical Dispositions

This chapter has emphasized what might be called the recruiting solution to team production problems. Most economists, in contrast emphasize the contractual or organizational solution. This appendix illustrates how reward systems can be adjusted by the firm to elicit better outcomes from teams. It bears noting, however, that rewards need not be entirely pecuniary. Smithian approbation and disapprobation often play roles in this process. Particular habits of conduct and internalized norms are often consequences of such formal reward systems.

The game matrix below illustrates a pecuniary solution to the shirking or team production dilemma. Team production is again assumed to be worthwhile, which implies that the productivity of each member is increased by the efforts of the others. In the game above, which is referred to as the natural cooperative, the group's output is shared equally. In the game below, a formeteur has created an artificial reward structure for his or her team. Each team member receives a reward (R) for work and a penalty (P) for shirking that is independent of the efforts of other team members.

The independence of salary or wage rates eliminates the free-riding problem associated with team production.

Table 7.10 Contractual Solutions to the Shirking Dilemma of Team Production

		Harold (hours of effort)		
		8 hours	6 hours	4 hours
Armen	8 hours	(A, H) R, R	(A, H) 14, 17-G	(A, H) 12, 18-2P
hours of effort	6 hours	17-P, 14	15-P,15-P	13-P, 16-2P
	4 hours	18-2P, 12	16-2g, 13-G	14-2G, 14-2G